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10/816,217	04/01/2004	Nicholas A. J. Millington	PA3445US	7302

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CARR & FERRELL LLP
2200 GENG ROAD
PALO ALTO, CA 94303

EXAMINER	
NICKERSON, JEFFREY L	
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2442	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/816,217	MILLINGTON, NICHOLAS A. J.	
	Examiner	Art Unit	
	JEFFREY NICKERSON	2442	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 May 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *577-600* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *577-600* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *12 May 2010*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This communication is in response to Application No. 10/816,217 filed on 01 April 2004 with a domestic priority date of 28 July 2003. The request for continued examination presented on 07 May 2010, which provides change to claims 577, 590, and 600, and presents arguments, is hereby acknowledged. Claims 577-600 are currently pending and have been examined.

35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim Rejections

3. Claims 577-600 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for "outputting the media stream media data … based on the time differential and source-clock information", does not reasonably provide enablement for "outputting the media stream media data … based on the time differential determined based on the source-clock information" when the source-clock information is within the media stream. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make or use the invention commensurate in scope with these claims.

Applicant's disclosure has been carefully examined to determine the scope of applicant's invention. Applicant discloses sending a media stream from a source to a receiver, the media streams being embedded with *timestamp data* as a time for presentation of the data, the timestamp being a source's time for playback relative to the source clock (Specification: for instance, pg 30, second paragraph; pg 37, second paragraph). The receiver then uses SNTP to calculate a clock differential between the source clock and the receiver clock (Specification: for instance, pg 17, first paragraph). The receiver then calculates a local presentation time for playback relative to its own local clock using the timestamp data and the clock differential (Specification: for instance, pg 17, first paragraph; pg 51, second paragraph).

Applicant's claim, however, recites calculating the differential based on "source-clock information" within the media stream. If the "source-clock information" is interpreted as being the source's clock time, then applicant's disclosure does not support piggybacking the source's clock data time within the media stream (it instead specifically recites using separate SNTP transactions to obtain it; pg 18, second paragraph). If the "source-clock information" is interpreted as being the timestamp indicating the time for playback relative to the source clock (which the examiner believes in the correct interpretation, see for instance claim 597), then the applicant's disclosure does not support determining the differential based on the "source-clock information" of the media stream.

35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Response to Arguments

5. Applicant's amendments and arguments, with respect to the rejections under 35 USC 103(a), have been fully considered but are moot in view of the new grounds of rejection.

Claim Rejections

6. Claims 577, 586-587, 589-591, 594-595, 597-598, and 600 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goddard (US 7,324,857 B2), and in further view of Mills (“Precision Synchronization of Computer Network Clocks", 1994).

Regarding claim 590, Goddard teaches a system for synchronizing media playback (Goddard: abstract), comprising:

a plurality of devices configured to be in communication via a network, the plurality of devices comprising a source device and one or more playback devices (Goddard: abstact; Figure 1);

wherein the source device is configured to transmit a media stream, the media stream comprising control information relating to timing information of the source device and media data (Goddard: col 4, lines 35-64 for sending command packets within audio stream, the command packets being related to the eventual differential calculation);

wherein the source device determines a time differential between a first time value associated with the source device and one or more second time values associated with one or more playback devices (Goddard: col 4, lines 35-64 provides for determining time difference for each receiver), the time differential based on the control information (Goddard: col 4, lines 35-64 provides for time difference being obtained);

outputting the media stream media data via two or more playback devices in synchrony based on the time differential determined based on the control information (Goddard: col 4, lines 35-64 provides the playback devices adjust their playback times accordingly), the two or more playback devices being in synchrony when a user observing the outputting of the media stream is unable to perceive time-delay differences between the two or more playback devices (Goddard: abstract; col 1, lines 54-58).

Goddard does not teach wherein the control information is source-clock information related to a first independent clock associated with the source device;

wherein determining a time differential is between a first time value and one or more second time values comprising determining a time differential between a first independent clock and one or more second independent clocks; or

wherein the receiving device determines the timing differential.

Mills, in a similar field of endeavor, teaches wherein the control information is source-clock information related to a first independent clock associated with the source device (Mills: section 2, specifically pg 3, LHS, last paragraph); and

wherein determining a time differential is between a first time value and one or more second time values comprising determining a time differential between a first independent clock and one or more second independent clocks (Mills: pg 3, LHS; section 2.1, specifically pg 3 RHS, last paragraph to start of section 3); and

wherein the receiving devices determines the timing differential (Mills: pg 2, section 2, first paragraph).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of Mills for having the clients pull clock information required for clock synchronization. The teachings of Mills, when implemented in the Goddard system, will allow one of ordinary skill in the art to have the playback devices pull NTP information from the source. One of ordinary skill in the art would be motivated to utilize the teachings of Mills in the Goddard system in order to synchronize the clocks of the source and playback devices by allowing the playback device to calculate the timing differential.

Regarding claim 591, the Goddard/Mills system teaches further comprising a user interface module configured to control one or more of the plurality of devices (Goddard: col 5, lines 31-55).

Regarding claim 594, the Benslimane/Mills system teaches wherein a clock rate of the one or more independent clocks associated with the one or more playback devices is adjustable (Mills: pg 3, LHS provides for adjustable frequency NCOs; See also section 2.1, paragraphs 1-3).

Regarding claim 595, the Goddard/Mills system teaches wherein the media stream comprises audio information (Goddard: abstract).

Regarding claim 597, the Goddard/Mills system teaches wherein the source-clock information comprises a timestamp (Mills: pg 2, RHS, last paragraph).

Regarding claim 598, the Goddard/Mills system teaches wherein one or more playback devices are operable with one or more of unicast transmission or multicast transmission (Goddard: col 1, lines 59-67).

Regarding claim 577, this method claim contains limitations found within that of claim 590 and the same rationale of rejection is used, where applicable.

Regarding claim 578, this method claim contains limitations found within that of claim 591 and the same rationale of rejection is used, where applicable.

Regarding claim 586, this method claim contains limitations found within that of claim 594 and the same rationale of rejection is used, where applicable.

Regarding claim 587, the Goddard/Mills system teaches wherein determining the time differential is performed periodically (Mills: pg 3 LHS, last paragraph; pg 3, LHS, last paragraph).

Regarding claim 589, the Goddard/Mills system teaches wherein receiving the media stream is performed by a multicast transmission methodology (Goddard: col 1, lines 59-67).

Regarding claim 600, this machine readable medium claim contains limitations found within that of claim 590 and the same rationale of rejection is used, where applicable.

7. Claims 580-583, 592, and 596 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goddard (US 7,324,857 B2); in view of Mills ("Precision Synchronization of Computer Network Clocks", 1994); and in further view of Benslimane ("A Multimedia Synchronization Protocol for Multicast Groups", 2000).

Regarding claim 592, the Goddard/Mills system does not teach wherein the plurality of devices are further configured such that devices can be added and removed from the plurality of devices without interrupting the tightly coupled synchrony.

Benslimane, in a similar field of endeavor, teaches wherein the plurality of devices are further configured such that devices can be added and removed from the plurality of devices without interrupting the tightly coupled synchrony (Benslimane: section 4).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of Benslimane for enabling clients to join the multicast group without interrupting synchrony. The teachings of Benslimane, when implemented in the Goddard/Mills system, will allow one of ordinary skill in the art to have new clients join a multicast group that is pulling clocking information from a source device. One of ordinary skill in the art would be motivated to utilize the teachings of Benslimane in the Goddard/Mills system in order to enable new users to join the playback group.

Regarding claim 596, the Benslimane/Mills system teaches wherein the media stream comprises video information (Benslimane: abstract).

Regarding claim 580, this method claim contains limitations found within that of claim 592 and the same rationale of rejection is used, where applicable.

Regarding claim 581, the Benslimane/Mills system teaches wherein the additional device replaces the source device as a new source device (Mills: pg 2, Figure 1

provides for nested multicast groups; Benslimane: section 4 provides for adding and leaving).

Regarding claim 582, the Benslimane/Mills system teaches wherein the additional device joins the one or more playback devices as a new playback device (Benslimane: section 4 for adding and leaving).

Regarding claim 583, this method claim contains limitations found within that of claim 592 and the same rationale of rejection is used, where applicable.

8. Claims 578-579, 591, and 599 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goddard (US 7,324,857 B2), in view of Mills ("Precision Synchronization of Computer Network Clocks", 1994), and in further view of Official Notice.

Regarding claim 579, the Goddard/Mills system does not teach further comprising providing status information associated with one or more of the plurality of devices.

An official notice is taken that such use of providing status information for aid in awareness of controlled devices was well known in the art at the time the invention was made by one of ordinary skill in the art.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize these known teachings for providing status information.

These known teachings, when implemented in the Goddard/Mills system, will allow one of ordinary skill in the art to monitor the statuses of the playback devices with the source device. One of ordinary skill in the art would be motivated to utilize these known teachings in the Goddard/Mills system in order to allow a user of the source device, such as presenter, identify when playback devices are not operating properly.

Regarding claim 588, the Goddard/Mills system does not teach wherein the transmission of the media stream is performed by a unicast transmission methodology.

An official notice is taken that such use of unicast for distribution of media information was well known in the art at the time the invention was made by one of ordinary skill in the art.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize these known teachings for using unicast. These known teachings, when implemented in the Goddard/Mills system, will allow one of ordinary skill in the art to target a specific playback device to send control information. One of ordinary skill in the art would be motivated to utilize these known teachings in the Goddard/Mills system in order to allow a user of the source device, control the playback devices individually.

Regarding claim 599, the Goddard/Mills system teaches tightly coupled synchrony output of a media stream between devices (Goddard: col 1, lines 54-58).

The Goddard/Mills system does not teach wherein the source device is capable of playback.

An official notice is taken that such use of a source device for playback was well known in the art at the time the invention was made by one of ordinary skill in the art.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize these known teachings for enabling the source device to playback the audio as well. These known teachings, when implemented in the Goddard/Mills system, will allow one of ordinary skill in the art to have the source device act as a playback device. One of ordinary skill in the art would be motivated to utilize these known teachings in the Goddard/Mills system in order to increase the devices capable of playing back the media and obtain more coverage area.

9. Claims 584 and 593 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goddard (US 7,324,857 B2); in view of Mills ("Precision Synchronization of Computer Network Clocks", 1994); and in further view Powers (US 2004/0203378 A1).

Regarding claim 593, the Goddard/Mills system teaches wherein a master device is a source device and a slave device is one or more playback devices (Goddard: Figure 3; col 4, lines 35-64).

The Goddard/Mills system does not teach wherein a master device is further configured to be converted into one of the one or more slave devices; or

and wherein at least one of the one or more slave devices is further configured to be converted into the master device.

Powers, in a similar field of endeavor, teach wherein a master device is further configured to be converted into one of the one or more slave devices (Powers: [0007] provides for masters handing off master-ship to a slave); or

and wherein at least one of the one or more slave devices is further configured to be converted into the master device (Powers: [0007] provides for a slave being promoted).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of Powers for having promotion/demotion scheme for multicast groups. The teachings of Powers, when implemented in the Goddard/Mills system, will allow one of ordinary skill in the art to promote playback devices to be the source device and demote source devices to mere playback devices. One of ordinary skill in the art would be motivated to utilize the teachings of Powers in the Goddard/Mills system in order to allow recovery if the source suddenly leaves the network, or the a playback device is deemed a more capable source device (more processing power, more content, etc).

Regarding claim 584, this method claim contains limitations found within that of claim 593 and the same rationale of rejection is used, where applicable.

10. Claim 585 is rejected under 35 U.S.C. 103(a) as being unpatentable over Goddard (US 7,324,857 B2); in view of Mills ("Precision Synchronization of Computer Network Clocks", 1994) and Powers (US 2004/0203378 A1); and in further view of Benslimane ("A Multimedia Synchronization Protocol for Multicast Groups", 2000).

Regarding claim 585, the Goddard/Mills/Powers system fails to teach wherein the tightly coupled synchrony is uninterrupted.

Benslimane, in a similar field of endeavor, teaches wherein the plurality of devices are further configured such that devices can be added and removed from the plurality of devices without interrupting the tightly coupled synchrony (Benslimane: section 4).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of Benslimane for enabling clients to join the multicast group without interrupting synchrony. The teachings of Benslimane, when implemented in the Goddard/Mills/Powers system, will allow one of ordinary skill in the art to have new clients join a multicast group that is pulling clocking information from a source device. One of ordinary skill in the art would be motivated to utilize the teachings of Benslimane in the Goddard/Mills/Powers system in order to enable new users to join the playback group.

Citation of Pertinent Prior Art

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Sullivan et al (US 7,209,795 B2; US 7,392,102 B2) discloses a synchronized multicast audio broadcast system that inserts timing control information into the media stream.

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JEFFREY NICKERSON whose telephone number is (571)270-3631. The examiner can normally be reached on M-Th, 9:00am - 7:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Philip Lee can be reached on (571)272-3967. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. N./
Examiner, Art Unit 2442

/Philip C Lee/
Acting SPE of Art Unit 2442